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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,239	06/09/2006	Nobuaki Matsuoka	292337US26PCT	1964

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EXAMINER	
FORD, NATHAN K	
ART UNIT	PAPER NUMBER
1712	

NOTIFICATION DATE	DELIVERY MODE
07/07/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/582,239	MATSUOKA ET AL.	
	Examiner	Art Unit	
	NATHAN K. FORD	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-12 and 14-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-12 and 14-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's Response

Acknowledged is the applicant's request for reconsideration filed April 22, 2010. Claims 1, 4, and 20 are amended. The applicant's arguments have been considered but are moot in view of the new grounds of rejection elaborated below.

Claim Objections

Claim 4 is objected to as being a duplicate of claim 1. Cancellation or amendment is required.

Claim Interpretation

With regard to claim 1, the recitation of a *first, second,* and *third transfer means for* invokes USC 112, sixth paragraph. However, in response to the applicant's remarks filed October 21, 2008, the examiner will interpret the above *transfer means* as being inclusive of any mechanism capable of conveying a substrate to the sites recited by the applicant's claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 4-7, 11, 14-15, 17-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takekuma, US 6,377,329, in view of Kirkpatrick et al., US 6,238,161, and Olbrich et al., US 5,083,364.

Claims 1-2, 4-5, 15, 17-18, 20, 22: Takekuma discloses a substrate processing apparatus comprising (Fig. 5):

- A carrier block (10) including:
  - A carrier placement portion (21);
  - A substrate carrier (C);
  - A first transfer means (22);
- A transfer block (71), comprising a second transfer means (72), provided adjacent to the carrier block for transferring the substrate along a transfer path (7, 34-43);

- A first delivery stage (62) capable of delivering a substrate between the first and second transfer means (7, 55-67; Fig. 9);
- A plurality of detachable process blocks (100, 300), each comprising (5, 62-67):
  - A heating unit (23) in column R1 (9, 18-40; Fig. 6);
  - A third transferring means (30) (Fig. 5);
  - A second delivery stage (EXT) (Fig. 6);
  - Four liquid processing units (3) (Fig. 3);
- A light exposure machine (200) (8, 40-45);
- An interface portion (51) located between the transfer path and the light exposure machine;
- Wherein the transfer path extends from the interface portion to the carrier block;
  - Wherein the process blocks are arranged on only one side of the transfer path.

Concerning the recitation that each block comprises both resist coating and developing units: Formally, Takekuma disposes the coating units (3) in a first module and the developing units (5) in a second module. However, both units execute liquid processing and "have substantially the same structure" (7, 18-20). It is thus the Office's position that the coating units are fully capable of performing developing processing and vice-versa. Accordingly, at least one of the units in the developing module can be configured to execute resist processing and one of the units in the resist module can be configured to execute developing. In this way, each module includes a coating and developing unit. Further, a recitation concerning the manner in which a claimed apparatus is to be employed does not differentiate the apparatus from prior art satisfying the claimed structural limitations (*Ex parte Masham*, 2 USPQ2d 1647). It is also the Office's position that each process block must inherently include a chemical "unit" to store and provide the liquid to the coating and developing modules.

Also, regarding the sequencing of processing operations: Takekuma discloses a controller (90) which renders the apparatus capable of processing a substrate according to the applicant's claimed sequence.

Takekuma does not dispose a utility unit within the transfer block. However, such configurations are known in the art. Kirkpatrick, for instance, describes a substrate processing system having a plurality of process modules (11) arranged alongside linear transfer chamber (13) (Fig. 3). Further, utility connection ports (33), which correspond with connection ports (23) formed at the base of each process module, are disposed within the transfer block to facilitate the efficient provision of supplies to the modules from a site external to the transfer block (4, 21-28; Fig. 1). In light of

this teaching, it would have been obvious to the skilled artisan to dispose utility units within Takekuma's transfer block to achieve the predictable result of providing utilities to the process blocks.

Lastly, Takekuma and Kirkpatrick are silent regarding the precise manner of affixment between the utility ports of transfer block and the process modules. Olbrich is thus cited in supplementation for the disclosure of an exemplary means of connecting process modules to utility ports. As delineated by Figure 1, Olbrich teaches a linear utility block (3) arranged alongside a plurality of detachable process chambers (1) (4, 14-25). To facilitate module detachment and engagement, the utility block is outfitted with several connection ends (10). The process module is first pushed up to the connection site, and then mating hooks automatically extend from the connection end to engage and securely couple the module to the utility block (4, 47ff). The process is also reversible. This technique allows for the process modules to be connected in an arbitrary manner depending on the instant purpose, and reduces the need for manual labor (1, 46-57). Accordingly, it would have been obvious to the skilled artisan to outfit Takekuma's transfer block with Olbrich's connection devices to promote the facile attachment and removal of the process modules.

Claim 6: A recitation concerning the manner in which a claimed apparatus is to be employed does not differentiate the apparatus from prior art satisfying the claimed structural limitations. The apparatus is capable of applying a precursor to a substrate.

Claim 7: Figures 15 and 17 of Takekuma depict two process blocks (100, 300) of identical dimension. Further, it has been held that the configuration of the claimed element is a matter of choice which a person of ordinary skill would have found obvious (*In re Dailey*, 149 USPQ 47). It would have been obvious to one of ordinary skill to configure two process blocks disposed within the same modular tool to have identical heights, lengths, and widths.

Claim 11: Any portion of the carrier block which is contiguous to a process block can be considered a positioning member.

Claims 14, 19: As the rejection of claim 1 articulates, the transfer and process blocks are detachably connected, which inherently implies the existence of sites of connection/disconnection.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takekuma in view of Kirkpatrick and Olbrich and in further view of Masayki et al., JP 10-012528, wherein machine translation was used.

It has been held that rearranging the parts of an invention involves only routine skill in the art (*In re Japikse*, 86 USPQ 70). Nevertheless, Figure 1 of Masayki delineates the claimed arrangement, thereby demonstrating the

suitability of the arrangement. It would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the interface of Takekuma as taught by Figure 1 of Masayki to achieve the predictable result of substrate processing.

Claims 9-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takekuma in view of Kirkpatrick and Olbrich and in further view of Cakmakci, US 4,836,968.

Takekuma does not teach the hinged attachment between chambers. Cakmakci articulates the general principle of attaching two chambers with a hinge to enable rotation about an axis, thereby demonstrating the equivalence of hinged attachments for the purpose connecting two discrete structures. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to secure the attachment of Takekuma's chamber portions and blocks through the use of a hinge.

Claims 12, 16, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takekuma in view of Kirkpatrick and Olbrich and in further view of Slocum et al., US 5,733,024.

Takekuma is silent regarding the presence of guide and positioning members. Slocum discloses a modular system wherein each process block is secured within a fixed reference frame via alignment elements (16), positioning elements (90), and attachment elements (89) (2, 43ff; Fig. 12). Any of these elements are capable of functioning as either a "connection end," "guide member," or a "positioning member." It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate guide and positioning members within the apparatus of Takekuma to configure the processing blocks as dimensionally stable and within a fixed reference frame (1, 43-48, 6, 10-30).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan K. Ford whose telephone number is 571-270-1880. The examiner can normally be reached on M-F, 8:30-5:00 EDT. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland, can be reached at 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/N. K. F./

Examiner, Art Unit 1712

/Karla Moore/

Primary Examiner, Art Unit 1716